INTER-OFFICE MEMORANDUM

TO See Distribution
AT

DATE February 20, 1968

FROM O. A. Finsand
O. A. Finsand

COPIES TO

AT Middletown Construction

JOB NO. 7100

SUBJECT Kaiser Engineers Weekly Field Activity Report

Transmitted herewith is the subject report for the week ending February 20, 1968.

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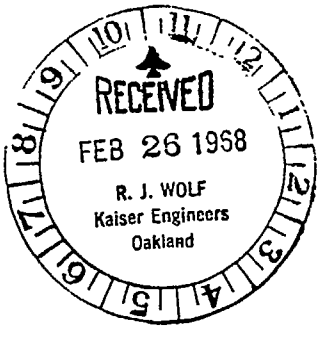

KAISER ENGINEERS
WEEKLY FIELD ACTIVITY REPORT
Week Ending February 20, 1968

WEATHER: Generally clear and cold with a light snow at end of period.

TEMPERATURE: Maximum - 40 degrees
Minimum - 11 degrees

CLIENT: Armco Steel Corporation

LOCATION: Middletown, Ohio

JOB NUMBER: 6471

JOB VISITORS

L. H. Misner

SUMMARY FORCE REPORT

	Kaiser Engineers Exempt	Kaiser Engineers Non-Exempt	Subcontractors	Foothill Electric	Total
Management	4	4		1	9
General Supervision	19	2	19	5	45
Field Engineering	43	15	12	14	84
Warehs. & Mtl. Control	3	7		1	11
Survey	2	14	3		19
Office Srv. & Repro.	1	6			7
Clerical			15	16	31
Craft *	—	826	914	671	2,411
TOTAL	72	946	963	708	2,617

* Average for week of men on payroll.

Average for week of Crafts is as follows:

Kaiser Engineers	759
Subcontractors	866
Foothill Electric	620
Total Crafts Working	2,245

WEEKLY FIELD ACTIVITY REPORT
Week Ending February 20, 1968

GENERAL COMMENTS

On February 14 the Operating Engineers for Kaiser Engineers and all subcontractors walked off the job at 9:30 a.m. This was over a dispute with the Electricians on the operation of an electrically driven pump used by Hunter Corporation (piping subcontractor) in the pickling and flushing of lube lines in the slab mill. They returned to work the following morning.

Structural steel progress in the BOF is generally fair although we are now looking at a delivery problem that may delay portions of the work but not in the critical areas. It has been discussed thoroughly with the fabricators and shipping operations are underway. The lance crane progress appears to be satisfactory for the start of Chemico's work. Although this week the major weight components of the charging aisle bridge crane were erected, we are considerably behind schedule due to delivery and other reasons and this could affect the erection of the furnace vessels. Practical alternate methods have been researched and we are hopeful that they can be initiated whereby a good portion of the delay can be relieved.

Good progress was made by Bouligny and Foothill in the Mold Yard and Stripper building. Barring unforeseen difficulties we should make our target dates in the Mold Yard and Stripper.

Generally speaking, the Soaking Pits progress appears good and target dates are feasible.

In the Slab Mill the two Saturdays of overtime with the mechanical contractor has given us considerable progress in the right areas and it now appears that the overtime anticipated for mechanical work will not be necessary. The electrical portion of the work necessary to meet the June completion date is extremely tight and daily and weekly monitoring is being conducted in order to keep all concerned advised of what is going on. Although it is this writer's opinion that we can meet target dates piping-wise, we feel that we are going to encounter problems with this subcontractor since our records indicate that he has expended considerably more manhours than we think his contract justifies. We can see now the reluctance of increasing his manpower to work all areas that are now open to him.

In the Hot Strip Mill our major effort now is confined mostly to the testing program that is functioning fairly well in the downcoiler and conveyor areas where we are experiencing some delays due to mechanical problems. Detail reviews have and will continue to be made on the completion lists throughout the Hot Strip Mill.

On the Pickle Lines and Green Coil Storage our subcontractor essentially made his target dates in energizing the 13.8 KV cable, the 250 volt dc power supply and energization of bridge cranes.

WEEKLY FIELD ACTIVITY REPORT
Week Ending February 20, 1968

PROJECT PROGRESS

1. 7143 - HOT STRIP MILL

1.3 Structural and Miscellaneous Steel: An average work force of twenty-one ironworkers was maintained in the hot strip mill during the period. In the finisher area, installation of the maintenance platform continued on swing shift. In the downcoiler area, progress continued on the installation of the valve platforms and air cylinder protection guards. Sixteen sheetmetal workers continued the installation of the heat shield at furnace #3. In the rougher area, the exhaust fan was being installed in the grease house. Flexible connections were being installed at the fume elimination system.

1.5 Heating and Ventilating: The Honeywell representative inspected the bag houses on February 19th and bag houses 5, 7 and 14 are now completed. The damper motors in bag houses 10 and 12 required rework which was completed by the end of the period. Bag house 15 required completion of the control tubing to the steam valve and this work has now been completed. Bag houses 1, 2, 3 and 4 required additional electrical work on the controls which will be completed early next period. A further inspection tour of the bag houses will be held during the next period.

1.6 Mechanical: During the period, Eichleay Corporation maintained an average work force of twenty-seven men on mechanical installation in the hot strip mill. On Wednesday of this period, Armco completed their second trail run of slabs through the rougher train. Furnace #1 was again cooled down for inspection of refractory. In the finishing mill area, coupled testing continued on auxiliary mill equipment. The finishing mill #7 torque tube has been disconnected in order to isolate the source of excessive noise developed in the gear train during coupled runs. In the downcoiler area, uncoupled tests were performed for the wrapper roll of downcoiler #3, the pinch rolls and the mandrel drive. Coupled tests were completed for the pinch roll of the #2 downcoiler. During testing, the top wrapper roll assembly for downcoiler #1 was found defective and has been shipped back to the United factory for rework. This unit was replaced with spare parts and testing on downcoiler #1 is continuing. Installation of the tail lifting plates for the coil bander was completed this period. In the coil conveyor area, installation of the revised portion of the radial turn for conveyor #6 continued. This installation is scheduled to complete next period. Coil conveyors 9 and 10 are complete and ready for testing. The gear guards for conveyors 7 and 8 are being prefabricated into split sections to resolve the structural interference during removal of the guards. Installation of these guards will complete conveyors 7 and 8. Testing of these remaining conveyors will commence as soon as electrical power in the area is available.

1.7 Piping: During the period, 360 feet of piping was installed for a total to date of 341,397 feet. A total of 1,305 feet of piping now remains to be installed. Systems worked on during the period were: grease system, hydraulic system 19, steam, well water and instrumentation. Pickling of the oxygen system installed by Delta is now scheduled for early in March. The leakage problem on the sump pumps was reviewed by the vendor's representative and these pumps are now to be returned to the factory. The reassembly of hydraulic system 19 will be completed during next period for handover to start-up operations. Additional supports were being placed for hydraulic system 18 and the three downcoiler air systems; but, this operation will not interfere with start-up operations. Grease piping for the runout rolls has now been completed apart from the realignment that may be required for the installation of the two pyrometers. The Foam-X fire system at grease house #2 has been completed with electrical testing remaining to be done. At the pump house, the oil pump for compressor #2 has been installed. During the period, a pipefitter force of sixty-four men was maintained in the hot strip mill piping operations.

1.8 Electrical: Foothill Electric installed 6,800 lbs. of exposed conduit for a total to date of 1,537,000 lbs. or 97% complete. 10,000 feet of low voltage cable was installed for a total to date of 1,935,000 feet or 97% complete. 200 low voltage cable terminations were made for a total to date of 32,800 or 97% complete. 13,000 feet of control cable was installed for a total to date of 2,056,000 feet or 99% complete. 300 control cable terminations were made for a total to date of 61,800 or 97% complete. 5,000 feet of computer cable was installed for a total to date of 941,000 feet or 99% complete. 400 computer cable terminations were made for a total to date of 30,300. 3,300 lbs. of conduit and 4,200 feet of wire were installed. 250 terminations and 13,000 feet of communication cable and TV cable were installed. 200 lbs. of structure grounding was installed for a total to date of 145,200 lbs. or 94% complete. A total work force of two hundred and twenty-three electricians worked on electrical installation in the hot strip mill during the period.

1.9 Miscellaneous Subcontracts: Owens Corning Fiberglas Company maintained an average work force of twenty-seven men on insulation during the period. 721 feet of steam pipe was insulated in the hot strip mill together with 1,109 feet of condensate piping. The following areas still remain to be insulated in the hot strip mill. Insulation in the fuel oil pump house which is scheduled for completion during next period. Completion of the overhead runs in the hot strip mill depend on availability of cranes. Insulation in the boiler house is scheduled for completion March 15th.

Delta Pipeline Constructors installed 860 feet of service piping in the hot strip mill during the period consisting of well water, oxygen and natural gas piping. 740 feet of drops were installed during the period. There now remain four cutting stations to be completed and work is progressing on all of them. During the period, testing continued on the oxygen piping on E line and the natural gas piping on D line.

Salem-Brosius continued with refractory installation on furnace #2. The front seal and water jacket castables have been placed and the #2 hearth ram set refractories in the soak zone are now being placed for dry-out which is scheduled to start February 26th.

Babcock and Wilcox schedule boil-out of #3 boiler for February 26th.

Honeywell is 95% complete with instrumentation in the waste heat boiler area with unit #3 nearing completion.

Stuart Painting maintained an average work force of thirteen men in the hot strip mill during the period. Painting operations in the finishing mill area continued on night shift from columns 42 to 46. Day shift operations continued in the motor room and motor room basement from columns 33 to 50 and painting was initiated in the fuel oil pump house.

2. 7146 - SLAB MILL

2.1 Excavation and Backfill: 2,300 cubic yards of backfill was installed during the period at the south end of scale pit #4 for a total to date of 220,917 cubic yards.

2.2 Concrete: 189 cubic yards of concrete was placed for a total to date of 48,311 cubic yards. Concrete for the period consisted mainly of mill aisle slabs between E and D lines. Formwork and shoring continued throughout the period for the suspended slab over the crop conveyor trench between scale pit 4 and the slab mill. Formwork was also in progress for the railroad track along the east side of scale pit #4.

2.3 Structural and Miscellaneous Steel: During the period, a crew of fifteen ironworkers continued with miscellaneous iron installation in the slab mill. During the period, the scarfer maintenance platform and smoke hood was completed. Some lay-down plates were set in place in the main mill aisle. Progress was also continued on the installation of hatch covers at the north end of the piler area. Twenty-five sheetmetal workers installed siding and air ducts in the slab mill. Stacks for bag houses 3, 4 and 5 were completed. Installation of stacks for bag houses 1 and 2 was started at the close of this period. Work continued on all five bag house plenums in order to seal air gaps. Roofing and siding for the scale pit control room was completed this period.

2.6 Mechanical: Eichleay Corporation maintained an average work force of fifty-four men on mechanical installation in the slab mill. At the main mill, installation of the upper motor base for the horizontal drive was delayed due to the spindle bearing cap for the lower main drive being incorrectly drilled. This cap was sent to the General Electric factory in Cincinnati for rework and is scheduled to be back on the job site on February 21st for reinstallation. Good progress was maintained on other portions of the main mill throughout the period. Main mill installation is now 75% complete. Progress was also continued during the period on installation of remaining table motors, platforms and walkways at the main

mill, front manipulator drive motors, the dry scale removal skip hoist rails, slab pushers, drives for the east transfer car and #1 and 2 slab pilers. Mechanical installation of the shear assembly is 90% complete, scarfer assembly, 95% complete, crop pusher, 75% complete, slab pusher, 40% complete, fume elimination system, 10% complete and the hot spray, 25% complete, for an overall mechanical completion of 75% complete. Major items grouted during the period were as follows: west ingot buggy drive motor base, delivery manipulator drive, side guides for tables 12, 14 and 16, #1 and 2 transfer car drive base and #2 piler guides.

2.7 Piping: Hunter Corporation maintained an average work force of fifty men in the slab mill. In the oil cellar, a jurisdictional dispute involving the operations of pickling pumps caused some delay in the pickling operation. Lube oil 6 has been pickled and circulation of flushing oil was continued during the period. Preparations are in progress for pressure testing and pickling of lube oil 5 and 7. Pipe installation during the period consisted mainly of water systems in the scale pit area, installation of grease piping, ventilation piping for the lube oil systems and well water piping in the main mill aisle. Steam piping for bag house 4 is 87% complete. During the period, 746 feet of pipe was installed for a total to date of 26,574 feet.

2.8 Electrical: Foothill Electric maintained an average work force of two hundred and thirty men in the slab mill. During the period, 5,300 lbs. of exposed conduit was installed for a total to date of 124,400 lbs. or 74% complete. 400 lbs. of structure grounding was installed for a total to date of 29,500 lbs. or 59% complete. 100 feet of 2.4 KV cable was installed for a total to date of 2,700 feet or 20% complete. Eighteen 2.4 KV cable terminations were made for a total of 18 or 15% complete. 25,000 feet of low voltage cable was installed for a total to date of 116,500 feet or 20% complete. 2,500 feet of control cable was installed for a total to date of 30,500 feet or 11% complete. 3,600 feet of computer cable was installed for a total to date of 5,000 feet or 5% complete. 3,000 lbs. of conduit, 1,500 feet of wire and twenty-six fixtures were installed during the period. Six 13.8 KV terminations were made for a total to date of 162 or 90% complete.

3. 7143- SOAKING PITS

3.1 Excavation and Backfill: 676 cubic yards of slag backfill was installed for a total backfill to date of 114,798 cubic yards.

3.2 Concrete: 89 cubic yards of concrete was placed as fill concrete for the charging tracks for a total to date of 29,683 cubic yards.

3.4 Roofing and Siding: 5,001 square feet of siding was installed for a total to date of 108,871 square feet. Siding during the period was installed mainly on the service bay area. This bay is 85% complete.

3.6 Mechanical: Loftus Engineering maintained an average work force of ninety-seven men on battery installation in the soaking pits. Installation of composite wall refractory continued on pits 1 through 12. At batteries 1, 2 and 3, installation of brick clips was completed and composite wall installation at pits 11 and 12 is now 50% complete. Pressure testing of piping systems for battery 6 was continued by Loftus throughout the period. The coke oven gas and natural gas systems were tested. Additional testing will be required for the natural gas because of some additional piping being added to the system. At battery 5, preparations were underway for pressure testing of the Loftus piping requirements. These tests are being accomplished with air at 75 pound pressure. With the #6 battery motor control center energized, electrical check out of the circuits and systems related to this facility was in progress during the period. The remaining motor control centers in the soaking pit are scheduled to be energized during the next two weeks. Dry-out of pits in the #5 and 6 battery area will commence as soon as natural gas service pipe is completed to these units.

3.7 Piping: Delta Pipeline Constructors maintained a twenty-seven man work force on service piping in the soaking pits. Progress consisted mainly of vertical drops from the main headers for fuel lines, oxygen and compressed air piping. 1,138 feet of piping was installed during the period for a total to date of 11,198 feet.

3.8 Electrical: Foothill Electric installed 3,700 lbs. of exposed conduit for a total to date of 83,500 lbs. or 59% complete. 2,400 lbs. of conduit, 6,300 feet of wire and fifty fixtures were installed during the period.

4. 7128 - BASIC OXYGEN SHOP AND MOLD YARD

4.1 Excavation and Backfill: 1,840 cubic yards of excavation was completed for a total to date of 205,015 cubic yards. 1,724 cubic yards of backfill was placed for a total to date of 262,884 cubic yards.

4.2 Concrete: 109 cubic yards of concrete was placed for a total to date of 20,302 cubic yards. This concrete included the first lift of the electrical control room north wall, electrical manholes 4 and 5 walls and conduit runs, footings and piers at the conveyor and the floor slab for the temporary rectifier building, At the mold yard, the spray mixing station floor slab at column 4 was placed.

4.3 Structural and Miscellaneous Steel: 262 tons of structural steel was erected at the main B.O.F. facility for a total to date of 3,447 tons. (This total to date includes 2,006 tons at the mold yard.) At the main B.O.F. facility, 6,033 tons of structural steel (exluding 328 tons of anchor bolts and base plates) has been installed to date. No steel was erected on February 20th due to bad weather and erection was shut down on February 14th due to the operators walk-off. Erection of flux bins #1 through 6 has now been completed together with the flux lead-in floor

frame. The erection of the charging aisle crane #501 was initiated on February 19th and, to date, the first main girder has been set. Erection of the lance crane #506 was completed during the period and bolt-up is now 90% complete.

4.6 Mechanical: At the mold yard, progress continued in the electrical control room and including setting and wiring of switchgear. Wiring for crane #522 was completed and is now ready for testing. The wiring for crane #521 was initiated during the period.

4.7 Piping: At the mold yard, work continued on the toilet room fixtures and plumbing installation. Work was initiated on the overhead service piping during the period and progress continued on the installation of roof drains. The installation of the lube system on crane #522 was completed on February 19th.

5. 7145 - STRIPPER BUILDING

5.3 Structural and Miscellaneous Steel: Erection of the rectifier building was essentially completed during the period. The rectifier and switchgear have been moved in and the majority of the equipment has been set and wired.

5.4 Roofing and Siding: 430 square feet of siding was installed for a total to date of 30,641 square feet. The installation of the roofing and ridge ventilators was completed on February 19th. Progress continued on the installation of roof drains, high bay electrical work and the installation of the lube piping for bridge crane #354.

6. 7150, 7156 and 7159 - PICKLE AREA

6.2 Concrete: A total of 362 cubic yards of concrete was placed in pickle lines 4 and 5 during the period. On pickle line 5, concrete was placed for the wet loop pit slab and the top of #7 electric manhole. On pickle line 4, concrete was placed for the block roll drive footings, the top of #5 electric manhole, the walls for the welder foundation and various conduit encasements. On pickle line 4, formwork continued for the second lift [redacted] #1 and 2 pay-off rolls. On pickle line 5, pile driving has now [redacted] completed for #2 catenary pit.

6.3 Structural and Miscellaneous Steel: During the period, Ohio Valley erected 40 tons of structural steel in the pickled coil storage building for a total to date of 1,407 tons. Erection of the roof trusses and the east wall has now been completed. Completion of the west wall depends on backfill and concrete foundations.

6.4 Roofing and Siding: The jambs for the rolled steel vent doors on E 2 and F lines were set during the period. In the green coil storage building, progress continued on the roof vents and the cladding for the streamline vent was initiated. No Steelcx siding was installed on the east gable end of the pickler building during the period. FBS Builders completed the block walls between column 29 and 32 on H line and progress is now being made on the walls of the entry transformer room on H line between columns 21 and 17.

6.6 Mechanical: Erection of the pickle tank support steel and looper car rails for the #4 pickle line continued during the period with 150 feet of looper car rail set and ten pickle tank support columns. In the green coil storage building, Ohio Valley has now bolted 80% of the grating on the coil conveyors. Handrails on walkways and stairs were installed during the period.

6.7 Piping: Delta Pipeline Constructors continued installing service piping headers along G line in the pickle line building. To date, 1,600 feet of plant air and natural gas piping has been installed. Progress continued on the plumbing for the toilet in the maintenance aisle. In the green coil storage building, Norn Woolley continued installation of service piping on C line and the maintenance aisle. The plant air and natural gas tie-ins on column 14 on C line have now been completed. Total pipe installed to date is 1,120 feet.

6.8 Electrical: During the period, Lake Erie Electric energized the 13.8 KV switchgear and the 250 volt rectifier station. The 480 volt substation is scheduled to be energized during next period. Cable pulling from the #4 motor room to the panels in the green coil storage building is complete. All cable pulling and splicing required for energizing cranes 401, 402 and 405 and the north and south aisle conveyors has now been completed. No progress was recorded on the installation of the high bay lighting conduits along B and C lines in the green coil storage building during the period.

7. UTILITIES

7110 - Steam Distribution System: The 24" steam line between boiler house #2 and #3 has been accepted by Armco with the exception of the steam supply line to the B.O.S. facility.

7110 - Power Distribution: The cold finish substation and the temporary pickle line to motor room #4 were energized during the period and the bus phasing checked out by Armco on February 19th. The cable pulling from tower 24 to the mold prep and the stripper rectifier buildings has been completed. Making up of the terminals for the mold prep equipment is 50% complete. Pot head installation on tower 24 was initiated on February 21st.

WEEKLY FIELD ACTIVITY REPORT
Week Ending February 20, 1963

7111 - Sanitary Sewers: Delta Pipeline Constructors continued corrective work on the infiltration problem in the steelmaking area. Flushing operations were started to clear the lines from manhole 576 to the southeast. Sanitary sewer installation continued near the laboratory building. Truss pipe was placed between manholes 585 and 586 and cast iron pipe was placed from manhole 586 to the basic oxygen plant.

7112 - Drainage and Site Development: 4,971 cubic yards of excavation was completed during the period for a total to date of 776,521 cubic yards. 4,735 cubic yards of backfill was placed for a total to date of 1,009,695 cubic yards. No piping progress was recorded by Delta Pipeline for the period.

7113 - Trackwork: DHS Corporation installed 2,320 feet of track and four turnouts west of the mold yard during the period. Turnouts connecting the existing tracks south of the open hearth #2 will be started during next period. To date, 107,452 feet of track has been installed together with 165 turnouts and this contract is now 70% complete.

7114 - Locker Rooms: In the steelmaking area, personnel locker erection continued in the west locker area. Plastered ceilings has been completed in the janitors, office, wash, drying, shower and toilet rooms and the prime coat has been completed on all interior and exterior vertical surfaces. Equipment has been initially set in the mechanical equipment room. The locker room in the south area has been accepted by Armco.

7186 - Waste Disposal for the Pickle Facility: During the period, 72 cubic yards of concrete was placed in the floor slabs for the aeration and flocculation tanks. Excavation of the trenches and acid drains in the waste disposal building was started during the period together with the erection of electrical manhole #2. Erection of the structural steel for the waste disposal building has been completed and bolted up. The limestone bins are scheduled for delivery next period.

OAF/sec

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