PLAINTIFF'S EXHIBIT
KEN-40

INTER-OFFICE MEMORANDUM

TO See Distribution

DATE February 27, 1968

FROM 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 27, 1968.

OAF/sec

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KAISER ENGINEERS
WEEKLY FIELD ACTIVITY REPORT
Week Ending February 27, 1968

WEATHER: Fair and clear throughout the period.

TEMPERATURE: Minimum - 3 degrees
Maximum - 37 degrees

CLIENT: Armco Steel Corporation

LOCATION: Middletown, Ohio

JOB NUMBER: 6471

JOB VISITORS

none

SUMMARY FORCE REPORT

	Kaiser Engineers Exempt	Kaiser Engineers Non-Exempt	Subcontractors	Foothill Electric	Total
Management	4	4		1	9
General Supervision	19	2	17	5	43
Field Engineering	43	15	11	14	83
Warehs. & Mtl. Control	3	7		1	11
Survey	2	14	3		19
Office Srv. & Repro.	1	6			7
Clerical			14	16	30
Craft *	---	819	887	662	2,368
TOTAL	72	867	932	699	2,570

* Average for week of men on payroll.

Average for week of crafts is as follows:

Kaiser Engineers	744
Subcontractors	825
Foothill Electric	612
Total Crafts Working	2,181

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GENERAL COMMENTS

7106 - Air Distribution System

On Thursday #2 compressor was shut down due to excessive vibration. It was disassembled and found that the impeller had rubbed against the housing. The impeller was dye checked and showed no indications of cracks. The thrust bearing check was okay. Worthington indicated that since the impeller had rubbed and some metallic material removed that dynamic balancing in place may be required. As of today, Worthington service representative was still checking to find the cause of the trouble.

On Friday, #1 Worthington air compressor had to be shut down due to excessive oil leakage in the motor bearings, so we are presently back on temporary air until both compressor problems can be resolved.

WEEKLY FIELD ACTIVITY REPORT
Week Ending February 27, 1968

PROJECT PROGRESS

1. 7148 - 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 furnace area, the handrail around the hoist opening at the 222 foot elevation was completed and progress continued on similar work at the 154 foot elevation. Progress was continued on the installation of the furnace counterweight guards. In the finisher area, the ironworkers returned to day shift work on February 26th, and to date, all maintenance platforms have been completed apart from one at finisher 4. In the downcoiler area, the air cylinder protective guards at the upenders have been completed. The mandrel platforms have been reworked and safety items at the coil bander were completed. Stairway cover support angles were being installed at the dry scale skip hoist structure.

1.5 Heating and Ventilating: The additional electrical work required on bag houses 1, 2, 3 and 4 has been completed. Punch list items in bag houses 1 through 5 and 15 are being completed. A preliminary inspection has been requested for bag houses 6 through 14 on which the final punch list items have now been completed. A further inspection tour has been scheduled for next period. The Honeywell check out has not yet been completed.

1.6 Mechancial: During the period, Eichleay Corporation maintained an average work force of twenty-five men on mechanical testing and remaining installation work in the hot strip mill. In the finishing mill area, speed regulation tests and tune up was continued under the supervision of Westinghouse engineers throughout the period. Adjustments are being made to tighten main drive coupling bolts as required. In the hot runout area, all of the rolls have been reinstalled and final check out of adjustable side guides is in progress. In the downcoiler area, a concentrated program was continued this period on testing of hydraulic components and related systems in connection with the three downcoilers. Coupled tests were completed for the downcoiler #1 side guides and the crop shear side guides. Final check out was continued on hydraulic system 18 as well as the top and bottom strip cooling systems. Test and check out of the #1 downcoiler coiling cylinder was initiated this period. No major problems were evident in this area at the close of the period. In the coil conveyor area, the installation of the radial turn requirements for conveyor 6 was completed and the remaining chain installation for coil conveyor 5 is in progress. This remaining chain work was delayed because of the modification problem related to conveyor 6. Final test and check out of the outside conveyors and green coil storage area conveyors will proceed as soon as power is available in the area. In the roll shop area, delivery of the main frame for the third roll grinder is scheduled for next week. It was reported by Mesta that the spindle assembly would not be delivered until approximately the middle of April.

WEEKLY FIELD ACTIVITY REPORT
Week ending February 27, 1968

1.7 Piping: During the period, 310 feet of piping was installed for a total to date of 341,707 feet. A total of 995 feet of piping now remains to be installed. Systems worked on during the period were the grease system, plant air, well water and instrumentation. Two sump pumps were returned to the factory for investigation of the shaft seal leakage problem. Until this is resolved we cannot reinstall the remainder of the sump pumps. Hydraulic system 19 has been reassembled and is now ready for start-up operations. Progress continued on the addition of further supports for hydraulic system 18 and the downcoiler air systems. Preparations for the installation of the two pyrometers and the grease line modification for the runout rolls continued during the period. During the period, a pipefitter force of sixty-five men was maintained on the hot strip mill piping operations.

1.8 Electrical: Foothill Electric Corporation maintained an average work force of two hundred and twenty electricians in the hot strip mill during the period. Foothill Electric installed 7,600 lbs. of exposed conduit for a total to date of 1,545,000 lbs. or 97% complete. 9,000 feet of low voltage cable was installed for a total to date of 1,944,000 feet or 97% complete. 70 low voltage cable terminations were made for a total to date of 32,900 or 98% complete. 6,000 feet of control cable was installed for a total to date of 2,062,000 feet or 99% complete. 30 control cable terminations were made for a total to date of 61,800 or 97% complete. 100 computer cable terminations were made for a total to date of 30,400. 4,300 lbs. of conduit, 14,400 feet of wire and two fixtures were installed. 700 feet of communications and TV cable was installed. 500 lbs. of structure grounding was installed for a total to date of 145,700 lbs. or 94% complete.

1.9 Miscellaneous Subcontracts: Owens Corning Fiberglas Company maintained an average work force of twenty-seven men on insulation during the period. Rework and additional line insulation continued in various areas of the hot strip mill. Completion of the insulation of the overhead runout in the hot strip mill is being coordinated with crane availability. In the boiler house, the manpower has been increased on the insulation of the steam lines.

Delta Pipeline Constructors installed one drop on the 10" well water line during the period. 80 feet of 4" well water was also installed along C line. Progress on the testing of the oxygen system has been slowed due to leaking valves. Vendor was contacted and it appears the 2" valves are unsatisfactory for the working pressure intended and will be replaced with another brand of ball valve. This problem affects the testing and thus the pickling of the oxygen system.

Salem-Brosius has completed refractory work on furnace #2 including the water damaged repairs. On furnace #3, refractory has been placed in the discharge doors, the heat zone supports and hearth and along the skid blocks. Furnace #2 was lit off for dry out at 6:00 p.m. on February 26th.

A decision was reached regarding the necessary repair work required in reheat furnace #1 which involves replacing the existing refractory at the intake section of the furnace where fall out occurred with standard brick. Corrective measures were initiated at the close of this period and a completion date for the repairing will be available next period.

Babcock and Wilcox changed boiler #1 from gas to oil operation at noon on February 27th. Operation of boiler #2 on oil firing has been scheduled for early next period. The #3 F.D. fan bearing which was used in the #2 unit is being replaced at unit #3 and will be ready for operations soon.

Honeywell continued with unit #3 instrumentation and extra work orders during the period. This contract is scheduled for completion by the end of February and is presently 99% complete.

Stuart Painting maintained an average work force of sixteen men in the hot strip mill during the period. Progress was maintained in the pump house, clarifier and fuel oil pump house where remaining items are scheduled for for completion during next period. Painting operations continued on night shift in the finishing mill area. Punch list items were being completed in the motor room and motor room basement during the period. Painting in the fuel oil pump house is now virtually completed.

2. 7146 - SLAB MILL

2.2 Concrete: 53 cubic yards of concrete was placed in the sheave block foundation slab and fill concrete for the vertical edger motor base for a total to date of 48,364 cubic yards.

2.3 Structural and Miscellaneous Steel: During the period, thirty ironworkers continued with miscellaneous iron in the slab mill. Progress continued during the period on installation of lay down plates which are now 60% complete. The cross over walkway was installed, the inspector station completed and hatch covers for the piler tables were trimmed and made ready for installation. The north side of the vertical edger base frame was removed in order to allow installation of the motor base. This frame will be reinstalled at a later date. Nineteen sheetmetal workers continued throughout the period with installation of stack sections for bag houses 1, 2 and 5. These stack sections are scheduled for completion next period. The sealing of openings on the plenum walls to establish an air tight chamber was continued during the period. Good progress was generally experienced on bag house sheetmetal work.

2.6 Mechanical: Kichleay Corporation maintained an average work force of fifty-five men on mechanical installation in the slab mill. At the main mill, progress continued on platform and walkways, installation of the roll changer and roll change cylinder. Also the base for the upper main drive motor was

set in place this period. Progress was also maintained on motor installation for the ingot buggy drives, the crop pusher, the front manipulator, slab pilers and tables 6, 7 and 8. Erection of the scarfer fume structure on the east side of the slab mill is now 60% complete. Major units grouted this period were the front manipulator drive motors, the vertical and horizontal feed roll motor bases and the horizontal mill lower main drive motor base. Eichleay worked sixteen millwrights on Saturday, February 24th. It is apparent that mechanical installation has advanced adequately to insure no delays to remaining electrical or piping installations throughout the mill area.

2.7 Piping: Hunter Corporation maintained an average work force of fifty men on slab mill piping during the period. Progress this week was confined mainly to installation of furnace cooling water, oil tank vent piping and completion of lube oils 5 and 7. Vent piping for lube oil 3, 6 and 7 were completed. Flushing of lube oil 6 was also completed on February 26th, 1968. During the period, 992 feet of piping was installed for a revised total to date of 26,758 feet.

2.8 Electrical: Foothill Electric maintained an average work force of two hundred and forty men in the slab mill. Foothill Electric installed 9,000 lbs. of exposed conduit for a total to date of 133,400 lbs. or 83% complete. 500 lbs. of structure grounding was installed for a total to date of 30,000 lbs. or 60% complete. 12 - 2.4 KV cable terminations were completed for a total to date of 30 or 25% complete. 26,900 feet of low voltage cable was installed for a total to date of 143,400 feet or 29% complete. 890 low voltage terminations were made for a total to date of 1,430 or 21% complete. 12,200 feet of control cable was installed for a total to date of 42,700 feet or 18% complete. 3,600 feet of computer cable was installed for a total to date of 8,600 feet or 12% complete. 125 computer terminations were made for a total to date of 600 or 13% complete. 1,300 lbs. of conduit, 2,000 feet of wire and twenty-one fixtures were installed. 2 - 13.8 KV terminations were made for a total to date of 164 or 91% complete.

3. 7143 - SOAKING PITS

3.2 Concrete: 65 cubic yards of concrete was placed during the period for a total to date of 29,748 cubic yards. Period concrete consisted mainly of a section of track fill near column line 16 and the ramp floor at Y line near column 2.5.

3.4 Roofing and Siding: 800 square feet of Steelox siding was installed during the period for a total to date of 109,671 square feet. 2,024 square feet of painted siding was installed for a total to date of 5,384 square feet. The car thaw and service bay siding was completed. The coke breeze conveyor support structure was assembled and installation of the counterweights for the skip hoist is scheduled to follow.

3.6 Mechanical: Loftus Engineering maintained an average work force of ninety-nine men on battery installation in the soaking pits. Poured insulation for the remaining six cover carriages was completed this period. Twelve cover carriages have been erected in place. Progress continued on refractory installation of the twelve west soaking pits. Two of these twelve pits were completed this period. Structural and miscellaneous steel erection is essentially complete for all batteries. Installation of electrical requirements and piping systems for batteries 1 through 4 continued through out the period. Batteries 5 and 6 are being checked out for initial start-up operations.

3.7 Piping: Delta Pipeline Constructors maintained three crews on service piping installation in the soaking pit area. 1,903 feet of pipe was installed during the period for a total to date of 13,101 feet. 12,654 feet of pipe is yet to be completed by this contractor.

3.8 Electrical: Foothill Electric installed 4,800 lbs. of exposed conduit for a total to date of 88,000 lbs. or 63% complete. 1,600 lbs. of lighting conduit, 4,700 feet of lighting wire and eight fixtures were installed. 300 feet of 350 MCM and up low voltage cable was installed and fourteen terminations for a total to date of 17,300 feet and 64 terminations or 43% and 60% complete respectively.

4. 7128 - BASIC OXYGEN SHOP AND MOLD YARD

4.1 Excavation and Backfill: 1,606 cubic yards of backfill was placed for a total to date of 264,490 cubic yards.

4.2 Concrete: 175 cubic yards of concrete was placed for a total to date of 20,477 cubic yards. This concrete included the west end of the dock foundation, electrical manhole #7 base slab, the eight footings for the pump house building and the flux conveyor tunnel walls and roof slab. At the mold yard, the spray mixing station concrete was placed at column 4.

4.3 Structural and Miscellaneous Steel: 596 tons of structural steel was erected at the main B.O.F. facility for a total to date of 6,629 tons. (excluding 328 tons of anchor bolts and base plates). At the mold yard, 48 tons of steel was erected for a total to date of 2,134 tons. This steel at the mold yard completed the erection of the last two roof trusses and the west end wall. At the main B.O.F. building, the erection and bolt-up of the charging aisle crane #501 continued during the period. Wiring of the lance and hood crane #506 was initiated on February 26th. Painting of the structural steel girts and purlins west of column line 20 was started on February 24th, and preparations for the installation of roofing in this area was started at the end of the period.

4.6 Mechanical: At the mold yard, all the switchgear has been installed and is now ready to be energized. Reeving of crane #522 was initiated on February 27th. Wiring of crane #521 was continued together with the high bay electrical work. Preparations for completion of track installation through the mold yard were being made during the period.

4.7 Piping: At the mold yard, work continued on the installation of the roof drain piping and the service piping.

5. 7145 - STRIPPER BUILDING

5.3 Structural and Miscellaneous Steel: Progress at the rectifier building during the period included wiring and high potting of the switchgear. On bridge crane #354, progress was maintained on the electrical wiring and the insulation of lube systems. Progress was also evident on the installation of roof drain piping.

5.4 Roofing and Siding: 2,485 square feet of siding was installed for a revised total to date of 39,794 square feet. This included the siding on the west end wall and the siding on the dormer section.

6. 7150, 7156 and 7159 - PICKLE AREA

6.2 Concrete: 362 cubic yards of concrete was placed in pickle lines 4 and 5 during the period. On pickle line 4, concrete was placed for the #2 pinch roll and side guide foundation, the walls and stairs for #1 and 2 tension reels and various conduit encasement concrete. On #5 pickle line, the first lift for the walls of the wet loop pit was placed during the period. The quantity for this pour was 270 cubic yards. Excavation continued for #1 and 2 pay-off reels.

6.3 Structural and Miscellaneous Steel: During the period, Ohio Valley erected 53 tons of structural steel in the pickled coil storage building for a total to date of 14,060 tons. This progress included the installation of ladders and ventilator walkway. Bolt-up work continued together with welding of fascia, gutter and checker plate.

6.4 Roofing and Siding: Progress continued on setting of fascia strip for the south [illegible]-to and a start was made on the flashing on G line. No Steelox siding was installed on the east end of the pickler building during the period. FBS Builders continued setting masonry block for the walls on the entry transformer room on H line between column 17 and 21.

6.6 Mechanical: Erection of the pickle tank support steel and looper car rails for the #4 pickle line continued during the period with 125 tons of structural steel being set. In the green coil storage building, Ohio Valley installed miscellaneous handrails on the stairs and in the conveyors. Erection of the stairs to the crane girder at the east end of the building was started. The seats in the crane cabs have now been set.

6.7 Piping: Delta Pipeline Constructors continued installing service piping headers along G line in the pickle line building. To date, 2,480 feet of plant air and natural gas piping has been installed. Preparations for a start on the oxygen piping have now been made. In the green coil storage building, Norm Woolley installed 360 feet of oxygen piping along C line during the period. Total pipe installed to date is now 1,480 feet. Progress continued on the grease piping for crane 402 and 403 during the period. The piping for crane #403 is now 90% complete.

6.8 Electrical: During the period, Lake Erie Electric checked and energized the 480 volt #1 substation. Crane #405 was checked out and energized for final electrical checks. On this crane, the reeving of the blocks is now 90% complete. Cranes #401, 402, 403 and 404 are ready to be energized. Further progress will be delayed until next period due to smoke accumulation in the switchgear and rectifier in the motor room. This equipment will have to be de-energized and cleaned. In the green coil storage building, work has not yet been started by Lake Erie Electric on the high bay lighting conduits.

7. UTILITIES

7106 - Air Distribution System: During this period, the #2 Worthington air compressor was started and placed on line. Modifications of handrails and platforms around the compressors was completed. Exception punch list items were essentially completed or working. Insulation and miscellaneous painting work is continuing.

7110 - Power Distribution: During the period, the cable terminations in the switchgear and electric tower 24 were completed. The cables were high potted and the cables and lines phased out. Lightning arrestors and jumpers were installed on tower 24 near the mold yard switchgear building.

7111 - Sanitary Sewers: Delta Pipeline Constructors continued flushing operations on the sanitary sewer in the steelmaking area. To date, the pipeline from manhole 571 to 576 has been cleared. Installation of sanitary sewer continued in the area of the office and laboratory building. Truss pipe was placed from manholes 592 to 593 and cast iron piping has now been completed from manholes #585 and 586 to the basic oxygen plant.

7112 - Drainage and Site Development: 6,702 cubic yards of excavation was completed during the period for a total to date of 783,229 cubic yards. 13,919 cubic yards of backfill was placed for a total to date of 1,023,614 cubic yards. Delta Pipeline Constructors started excavation for the 15" CMP from manhole 418 to 419 in the steelmaking area.

WEEKLY FIELD ACTIVITY REPORT
Week Ending February 27, 1968

7113 - Trackwork: DHS Corporation continued to install tracks and turnouts south of the open hearth #2. Ballast was placed on these tracks.

7114 - Locker Rooms: In the steelmaking area, personnel locker erection has been essentially completed. The plenum above the lockers have now been completed in the east locker area and this work has now started at the west locker area. Installation of water heaters and storage tank, exhaust fan and heating unit continued in the mechanical equipment room. Interior surface painting was resumed during the period.

7186 - Waste Disposal for the Pickle Facility: During the period, forming for the flocculation and aeration tank walls, the trenches in the waste disposal floor slabs and the 112 foot elevation floor slabs continued. The two electric manholes were excavated and excavation has now been started on the storm water drains. Steelox siding has now been delivered to the site. Ohio Valley placed rebar in the 112 foot elevation floor slabs.

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