

INTER-OFFICE MEMORANDUM



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DATE

November 14, 1967

FROM

L. McBean

McBean

AT

Middletown Construction

JOB NO.

7100

COPIES TO

SUBJECT Kaiser Engineer's Weekly Field Activity Report

Transmitted herewith is the subject report for the week ending November 14, 1967.

LM/sc

Distribution

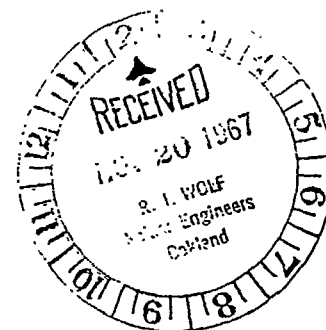
Armco

D. C. Osborne
C. G. Kramer
F. W. Barnes
T. R. Foley
P. R. Smith
D. Cox
J. S. Lotz
R. L. Brannaman

Kaiser

R. J. Wolf (Oakland)
W. F. Bort (Oakland)
D. A. Daly
F. X. Kast
J. W. Irvin
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Kaiser Reading File
Armco Reading File



KEN 003839

KAISER ENGINEERS
WEEKLY FIELD ACTIVITY REPORT
Week Ending November 14, 1967

WEATHER: Rather warm in early part of
period with cold trend toward end
with rain most of the day on Monday.

Client: Armco Steel Corporation

Location: Middletown, Ohio

Job Number: 6471

TEMPERATURE: Maximum - 62 degrees
Minimum - 24 degrees

JOB VISITORS

C. B. Blumenthal, J. F. Chajnowski, N. R. Gorder
D. Wheeler, D. Peters, S. Montell

SUMMARY FORCE REPORT

	<u>Kaiser Engineers</u>		<u>Subcontractors</u>	<u>Foothill</u>	<u>Total</u>
	<u>Exempt</u>	<u>Non-Exempt</u>		<u>Electric</u>	
Management	5	3		1	9
General Supervision	16	3	23	6	48
Field Engineering	49	21	11	16	97
Warehs. & Mtl. Control	4	7		1	12
Survey	2	17	4		23
Office Srv. & Repro.	1	7			8
Clerical			18	17	35
Craft *	—	<u>1,397</u>	<u>1,201</u>	<u>643</u>	<u>3,241</u>
TOTAL	77	1,455	1,257	684	3,473

* Average for week of men on payroll.

Average for week of Crafts is as follows:

Kaiser Engineers	1,347
Subcontractors	1,139
Foothill Electric	<u>640</u>

Total Crafts Working 3,126

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PROJECT PROGRESS

1. 7148 - HOT STRIP MILL

- 1.3 Structural and Miscellaneous Steel: A 70 man work force continued throughout the period on installation of Hot Strip Mill miscellaneous steel items. In the slab yards, work continued on the safety items and the extension of the collector rails for the semi-gantry cranes. At the furnace area, installation continued on the steam access platform at column 3 at the 154 elevation. Handrail is being installed around the pushers together with grating at the pusher drives. In the rougher and finisher areas, work continued mainly upon the safety items including handrail, swing gates and additional grating. In the roll shop, progress continued on the chock tilter floor plating which is almost completed. At scale pit 3, the miscellaneous steel work on the structure is completed with sheeting remaining to be installed.
- 1.4 Roofing and Siding: 1,210 square feet of siding was installed at the dry scale skip hoist structure and 1,850 square feet of siding was installed in the waste heat boiler area for an overall total of 663,753 square feet.
- 1.5 Heating and Ventilating: At the fifteen Hot Strip Mill bag houses, power wiring and lighting now remain to be completed on bag houses 6 and 10. All bags are installed in bag houses 1, 2, 3, 4, 5, 8, 9 and 15 with some already charged. Testing of the steam piping and coils inside bag houses 3, 4, 8 and 9 has yet to be done. Pipefitters are now completing their work inside bag houses 7 and 14. Norm Woolley maintained an average work force of six men on heating and ventilating units for the Hot Strip Mill. During the period, steam piping, power wiring and control wiring were completed for the switchgear house ventilating system. At the pump house, the remaining heating and ventilating punch list items were completed. At the water clarification building, power wiring and control wiring have now been completed. The remaining work consists mainly of minor revisions. Progress on other heating and ventilating units in the Hot Strip Mill consisted of piping and hanger construction in the grease house and completion of wiring the Honeywell control valve in the finishing mill area as well as start-up and gas-fired units.
- 1.6 Mechanical: During the period, Eichleay Corporation continued on mechanical installation in the Hot Strip Mill. In the furnace area, the slab reject car system has been completed mechanically and is ready for check out after the electrical installation has been completed. The delivery flume dry scale removal system cables and in-haul cable on the charging flume have been reeved up. The south

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cable is to be installed next period. The dry scale skip hoist structure is essentially complete apart from exterior stairs and landing to be installed after the concrete pads have been placed. The hoist has been installed and is ready for electrical work. Furnace #2 charging skids have been installed together with the majority of table side guides. #3 furnace skids will be installed after the removal of the temporary bricking platform. In the rougher area, progress continued on the modification work for the #4 edger. The remaining items requiring machining are in the Armco Machine Shop and will be re-installed and operating next period. In the finisher area, remedial work on the finisher mill drive motors continued under the direction of Westinghouse. At the end of the period, ten stator sections had been repaired and returned to the site, eleven sections were at Westinghouse or in transit and seven sections had yet to be shipped. In the hot runout area, thirty motors remain to be mounted on the hot runout table. These motors are presently with Westinghouse where they had been shipped for remedial machining. On conveyors 1 through 6, the installation of the Selsyn transmitters and pulse generators continued together with drive installation on coil conveyors 7 and 8. Representatives from the Link-Belt factory were on site with their proposed modifications for the radial turn on conveyor 6. Armco did not approve their proposals and further design work is now required. Roll assembly work in the north end of the roll shop continued during the period. Work on roll grinder #3 has halted until electrical hook-up can be completed. Chain installation on the wet scale removal system at scale pit #3 continued slowly as pumping out of the scale pit flumes was necessary for most of the period. Coupled tests were made between the director and the #2 pusher, R4 edger house adjust and charging tables 9, 10, 11 and 12. Check out of the P50 and P550 computers continued in the R2 and R6 test areas. The chock extractor cars in the roll shop were successfully tested and put into operation.

- 1.7 Piping: During the period, 4,364 feet of piping was installed for a total to date of 323,293 feet. 15,443 feet remains to be installed by Kaiser forces in the Hot Strip Mill. Major systems worked on during the period were: grease, hydraulic system 17, high pressure descaling, mill low pressure water, mill high pressure water, steam, natural gas, chemical systems, heating and ventilating, instrumentation and down-coiler air. Permanent oil was installed in lube oil system 10 and this system has now been placed in operation. Pickling and flushing will be completed early next period on hydraulic systems 15 and 16. The partial hydro test on hydraulic system 18 was completed during the period. The hydro testing of grease systems 20 through 24; header piping continued during the period. The corrections to the couplings on the high pressure descale pump motors were completed. On the high pressure descaling system, eighteen 2" and larger diameter welds were accomplished during the period with seven remaining. One 6" weld was

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reworked and ten 4" welds were reworked --- this was required by a revision. Piping and electrical wiring continued on the three sump pumps in pit #4. Installation of the #1 air compressor at the pump house continued during the period. Piping for this compressor is now being pickled prior to flushing. Worthington has re-installed the bearings for this unit. Air compressor #2 has been set and is now ready for grouting. Pickling of the twelve flocculator piping systems is presently in progress.

- 1.8 Electrical: Foothill Electric Corporation installed 19,000 lbs. of exposed conduit for a total to date of 1,382,000 lbs. or 97% complete. 600 feet of 2.4 KV cable was installed for a total to date of 51,800 feet or 95% complete. 24 - 2.4 KV cable terminations were made for a total to date of 460 or 79% complete. 38,000 feet of low voltage cable was installed for a total to date of 1,588,000 feet or 91% complete. 1,160 low voltage cable terminations were made for a total to date of 27,700 or 90% complete. 34,000 feet of control cable was installed for a total to date of 1,690,000 feet or 91% complete. 1,300 control cable terminations were made for a total to date of 49,500 or 86% complete. 32,000 feet of computer cable was installed for a total to date of 790,000 feet or 84% complete. 300 computer cable terminations were made for a total to date of 26,400 or 88% complete. 6,200 lbs. of lighting conduit, 11,000 feet of lighting wiring and 57 fixtures were installed during the period. 1,800 lbs. of structural grounding was installed for a total to date of 135,000 lbs.

- 1.9 Miscellaneous Subcontracts: Walker service engineers continued the installation of tank weir plates and filler plates at the six clarifiers for the clarification plant.

Moeschl-Edwards continued with the installation of rolling doors during the period and all doors in the original contract have now been completed. Two motors now remain to be installed for the motor operated doors.

Owens Corning Fiberglas Company continued with insulation of steam piping and lube oil piping during the period. Insulation progress continued in the oil cellar and metal jacket covering was placed on lube oil east flume. Progress continued throughout the period on insulation of steam, condensate and related tanks in the boiler house. The subcontractor was requested to continue insulation on a 24 hour basis on the 16" and 24" steamlines until this operation is completed. Delta Pipeline Constructors installed 181 linear feet of pipe during the period for a total to date of 31,760 linear feet. Progress continued with six air drops being installed on E-line and six oxygen and natural gas drops on D-line. Progress was made on the installation of the pressure reducing station on the oxygen line at column 1.

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FBS Builders completed the brickwork in the emergency coil storage area near the north end of the Hot Strip Mill. Brickwork at #2 slab transfer car area was initiated during the period and will be followed by the brickwork for the #1 slab transfer car. The latter area will be completed at the end of the next period.

Salem-Brosius continued work on furnaces #2 and 3 during the period. On Saturday, November 12, additional damage was caused to the north wing roof refractory on furnace #1 during flushing of boiler feed water line. The repair work to this refractory will be completed next period and the light-up date for furnace #1 is presently scheduled for November 20th. Furnace progress to date is as follows: unit #1, 98% complete; unit #2, 86.4% complete; and unit #3, 75.8% complete.

Babcock and Wilcox continued with lagging for the I.D. fans and ducts and on combustion air ducts for unit #3. During the period, two combustion air ducts on unit #1 and 2 were completed. Installation continued on #3 I.D. fan rotor and rework of the fan housing. During the period, progress continued on installation of spring hangers for #1 unit inlet air duct to the F.D. fan.

Mo Piping (Contractor for the Waste Heat Boiler 2½" and over piping) is 99% complete. During the period, a start was made on the heat up of the 425 lb. steamline. Hanger installation continued on the 425 lb., 165 lb. and 10 lb. steamlines together with lube oil piping on the F.D. and I.D. fans and anchoring of blow-off piping for cleaning of the 425 lb. steamline.

Norm Woolley (Contractor for the Waste Heat Boiler 2" and under piping) continued with piping at the F.D. and I.D. turbines and service water piping to the air compressors, emergency generator and condensate turbines. Steam trap assemblies were being installed at various locations together with piping supports at the combustion air heaters. Work continued on extra work requirements in the furnace area.

Minneapolis-Honeywell (Instrumentation Contractor for the Waste Heat Boiler) continued calibration on the instrument control room during the period. Progress continued on the rework of tubing from 154 to 222 elevation, together with tubing terminations to the main control panels and the soot blower panel. Work has started in boiler #2 area.

2. 7146 - SLAB MILL

- 2.1 Excavation and Backfill: 2,074 cubic yards of backfill was placed during the period for a total to date of 213,027 cubic yards.

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- 2.2 Concrete: 225 cubic yards of concrete was placed during the period for a total to date of 45,910 cubic yards. Concrete during the period consisted mainly of the scarfer wall to E-line at column 11.5, the pipe tunnel slab from 40 foot east of E-line, Z-line wall from column 12.5 to 13.5 and the mill aisle slab from column 13.5a to 14.5a.
- 2.3 Structural and Miscellaneous Steel: In the main mill pulpit, the installation of bay window steel is presently under jurisdictional dispute. This is holding up the glazing and the start of electrical work for this pulpit. Erection continued on bag house 1 which is 50% complete with bag houses 2 and 3 essentially erected. Installation of red siding on E-line was initiated during the period.
- 2.6 Mechanical: Eichleay Corporation continued in all areas of the slab mill on mechanical installation. The delivery manipulator drive base will have to be returned to the vendor for redrilling of the anchor bolt holes. The base is being prepared for shipment as soon as possible. Major items grouted during this period included: the rear mill table #9, scarfer approach table #11 motor bases and vertical mill bed plates. 59 tons of Mesta equipment was received this period for a total to date of 7,294 tons or 95% complete. Items received this period included the majority of the dry scale skip hoist system components.
- 2.7 Piping: Hunter (Piping Contractor for the Slab Mill) maintained an average work force of 61 men on slab mill piping during the period. Progress continued on installation of pipe for lube oil systems 3, 6, 7 and 11 with steam and condensate piping to the reservoirs of these lube oil systems being worked on during the period. The 4" natural gas, 2" oxygen and 10" oxygen headers along E-line from column 1.1a to 18.5a are now approximately 80% complete. 650 feet of 2" grease header piping was placed at the tables with 27 blocks and 130 points set to date. Hunter is prefabricating steam hangers and erecting hangers along C-line. Hunter installed a total of 1,100 feet of piping during the period for a total to date of 13,615 feet.
- 2.8 Electrical: 2,600 lbs. of exposed conduit was installed for a total to date of 63,800 lbs. or 40% complete. 2,100 lbs. of embedded conduit was installed for a total to date of 626,000 lbs. or 97% complete. 1,000 lbs. of conduit and 700 feet of conductor was installed during the period. 1,000 lbs. of structural grounding was installed for a total to date of 17,300 lbs. or 35% complete. 200 feet of cable tray was installed for a total to date of 10,200 feet or 64% complete.
3. 7143 - SOAKING PITTS
- 3.2 Concrete: 189 cubic yards of concrete was placed during the period for a total to date of 28,337 cubic yards. Concrete work consisted

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mainly of the loading dock slab from column 8.5 to 9.5, the receiving area loading dock slab and the loading dock slab from column 2.5 to 3.5.

- 3.3 Structural and Miscellaneous Steel: The purlins have been completed on the east end of the mill aisle and the expediter pulpit shed. Rail was installed on the ingot buggy track. Structural steel for the floor deck at elevation 107 between columns 9.5 and 10.5 is now 80% complete.
- 3.6 Mechanical: Loftus Engineering maintained an average work force of 160 men in soaking pit construction during the period. The following components were installed during the period: one pit damper, twelve emergency air damper doors, and twelve air dilution auto-vane controls. All battery pit walls have now been completed. The structural floor framing has been completed for all batteries at the 124 floor elevation. Steel framing along the ingot buggy track for armored plate and protective screen has been erected for batteries 1, 2 and 3. Refractory at batteries 3 and 4 is complete apart from downtakes. Combustion air piping at batteries 4, 5 and 6 is 100% complete. Coke oven gas and natural gas from the manifolds to the burners at batteries 5 and 6 is 100% complete, battery 4 is 95% complete, battery 3 is 50% complete and batteries 1 and 2 is 5% complete. The dilution air has been completed for batteries 1 through 6. During the period, work was in progress on condensate, pipe supports and handrails at various locations.
- 3.7 Piping: Delta Pipeline Constructors had an average work force of seven men during the period. Pipe supports are being erected at column Y 16.5 and FCWR pipe is being installed below the mezzanine level.
- 3.8 Electrical: Foothill Electric installed 5,400 lbs. of exposed conduit during the period for a total to date of 23,200 lbs. or 18% complete.
4. 7128 - BASIC OXYGEN SHOP AND MOLD YARD
- 4.1 Excavation and Backfill: 2,310 cubic yards of backfill was placed for a total to date of 239,832 cubic yards.
- 4.2 Concrete: 789 cubic yards of concrete was placed for a total to date of 18,495 cubic yards. The period concrete consisted mainly of the track hopper base slab, stack #2 pier, stack #1 foundation, office and lab piers, grade beams and conveyor support pier foundations.
- 4.3 Structural and Miscellaneous Steel: 387 tons of structural steel was erected at the main B.O.F. building during the period for an overall total of 2,925 tons. (This total to date includes the Mold Yard.)

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A total of 1,344 tons of structural steel has now been received from International Steel Company, 1,820 tons from International-Stupp, and 1,293 tons from Pittsburgh Bridge and Iron. Chicago Bridge and Iron started erection of the nitrogen sphere during the period.

- 4.4 Roofing and Siding: 3,420 square feet of siding was installed at the Mold Preparation Building for a total to date of 48,380 square feet. Installation of the ridge ventilators continued at this building during the period.
5. 7145 - STRIPPER BUILDING
- 5.3 Structural and Miscellaneous Steel: Bolt-up continued during the period on girts, purlins and sag rods. Structural steel painting continued during the period.
- 5.6 Mechanical: Erection of the Stripper Building overhead crane continued on the remaining portion and is scheduled for completion next period. Bolt-up remains to be completed on this crane.
6. 7150, 7156 and 7159 - PICKLE AREA
- 6.1 Excavation and Backfill: In the Pickle Line Building, the excavation for the #2 catenary pit on #4 pickle line is 65% complete.
- 6.2 Concrete: 72 cubic yards of concrete was placed at the Green Coil Storage Building for a total to date of 5,768 cubic yards. 29 1/4 cubic yards of concrete was placed at the Pickle Line Building for a total to date of 6,979 cubic yards. 61 cubic yards of concrete was placed at the Pickle Coil Storage Building for a total to date of 5,260 cubic yards. Period concrete for the Pickle Line Building consisted of #4 and 5 pinch roll slabs and the slab on #4 pickle line. Also included were two slabs in the north lean-to.
- 6.3 Structural and Miscellaneous Steel: In the Green Coil Storage Building, bolt-up was completed on the east and west wall structural steel. Facia and gutter is being welded at the east end in the Pickle Coil Storage Building. Bolt-up continued on the main structure. Four columns on J-1 still remain to be erected and eleven trusses out of a total of thirty-four have now been erected.
- 6.4 Roofing and Siding: 2,780 square feet of Type "C" red siding was installed at the Pickle Line Conveyor Building during the period for a total to date of 5,320 square feet. 1,680 square feet of Type "C" was also installed at the north end lean-to.

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- 6.7 Piping: Progress continued during the period by McGraw Construction Company on installation of roof drains for the Green Coil Storage Building. These roof drains are now 95% complete.
- 6.8 Electrical: In the Green Coil Storage Building, electrical work continued on crane 401 and 402. The mercury vapor lights were installed on crane 403. Two distribution panels with their switches were installed this period. The vertical tray installation for cranes 401 and 402 disconnect switches is now complete. In the Pickle Line Building, installation of the high bay lighting feeder conduit is now 75% complete.

7. UTILITIES

7109 - Pipeline: Delta Pipeline continued work in the valve station pit on additional pipe supports.

7110 - Power Distribution: R. H. Bouligny continued work on the power distribution in the Melt Area and the cold finish station. At the Melt Area switching station, the station service tie switch and wireway was installed this period completing the equipment installation on the equipment pad. Wiring between the service station transformers and the switches was installed. Backfill was completed to elevation 107 and the installation of ground rods and ground mat was started. The extra cubicle for the 13.8 KV high voltage line was added during the period at the main substation and the 15 KV cables were pulled to terminal tower #14. Conductors and shield wire were sagged and clipped in this week on the 13.8 KV line to the Mold Preparation Building. Conduit and pull box installations at towers #22 and 24 were completed and one circuit of 15 KV cable was pulled.

7112 - Drainage and Site Development: 3,354 cubic yards of excavation was completed during the period for a total to date of 684,084 cubic yards. 10,719 cubic yards of backfill was accomplished for a total to date of 934,604 cubic yards. 20 cubic yards of concrete was placed during the period for a total to date of 939 cubic yards. This concrete work included various manholes and inlets located at the Steelmaking Area. Delta Pipeline Constructors installed 46 feet of 24" corrugated metal pipe in the Steelmaking Area. In the south area, concrete tops were placed at various manholes and inlets. John R. Jurgensen (Road Paving Contractor) placed 2,347 cubic yards of gravel base during the period for a total to date of 2,347 cubic yards at the interplant roads from Lefferson to co-ordinate #E-4100.

7113 - Trackwork: During the period, DHS Corporation installed 129 feet of track between the soaking pit and the stripper building. 175 lb. rail was also installed inside the stripper building. 892 feet of flange way was installed at various places around the south area. Ballast was placed at the soaking pit, stripper building and north of the pickle line.

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7114 - Locker Rooms: At the south area locker room, erection of personnel lockers at the closure panels above the locker rooms was essentially completed in the left locker area. Trim for liner panels at the outside walls was completed this period. Temporary heating facilities are being installed to allow plastering and painting work to proceed. The water heaters, storage tank and furnace fan were initially set at the mechanical equipment room. At the Steelmaking Area locker room, glazing, asbestos, soffit and interior masonry work continued during the period.

7186 - Waste Disposal for the Pickle Facility: 25 cubic yards of backfill was completed during the period. 49 cubic yards of concrete was placed in the waste disposal building foundations during the period for a total to date of 165 cubic yards. Concrete placed during the period included the pump room and the sludge tunnel concrete slabs at elevation 97. Ohio Valley commenced placing rebar in the pump room and sludge tunnel walls and in the tank stand foundation.

Prepared by: _____

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